12/10/86

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RECORD NO.

SHAUGHNESSEY NO. REVIEW NO.

EEB REVIEW

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PETITION OR EXP. NO.

DATE OF SUBMISSION 11-7-86

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RD ACTION CODE/TYPE OF REVIEW 535

TYPE PRODUCT(S) : I, D, H, F, N, R, S Insecticide

DATA ACCESSION NO(S).

PRODUCT MANAGER NO. D. Stubbs (41)

PRODUCT NAME(S) Ortho Dibrom 14 Concentrate Plus methyl Eugenol in lure baits

COMPANY NAME USDA, APHIS

SUBMISSION PURPOSE Proposed Section 18 for use of lure baits to control oriental fruit flies in California

SHAUGHNESSEY NO.	CHEMICAL, & FORMULATION	% A.I.
034401	Naled	10.1
102701	Methyl Eugenol	72.5

ECOLOGICAL EFFECTS REVIEW

Naled
Methyl Eugenol

100.0 Submission Purpose and Label Information

100.1 Submission Purpose and Pesticide Use

The United States Department of Agriculture (USDA) is requesting a three year quarantine exemption to use naled and methyl eugenol (as an attractant). This bait lure will be used to control the oriental fruit fly, Dacus dorsalis, Hendel throughout the state of California.

Up to 2 gallons (of which 10.1% is naled and 72.5% is methyl eugenol) may be applied over 600 bait spots in 1 square mile area.

100.2 Formulation Information

Dibrom 14 Concentrate

Active Ingredient	by wt.
* Naled	85%
Inert Ingredients	15%

* 1,2-dibromo-2, 2-dichloroethyl dimethyl phosphate

Methyl eugenol

4-allyl-1,2-dimethoxybenzine

100.3 Application Methods, Directions, Rates

Apply approximately 6 square inches of material at each bait station. Bait stations consist of telephone poles, tree trunks, limbs and other inanimate objects.
Dilution: 1.75 ounces of naled per 12.7 ounces of methyl eugenol or 1.75 ounces of naled per 11.7 ounces methyl eugenol. Either formulation will be added to Min-U-Gel to obtain the desired consistency.

NOTE: Min-U-Gel must be added last.

Method of Application: Hand Spray Equipment

Frequency/Timing: Spot applications (bait stations) will be at a minimum of 600 bait stations per square mile. Bait stations will be serviced (activated) approximately every 2 to 4 weeks until the infestation has been eradicated. This is a quarantine treatment to be applied only by federal, state, or county agricultural personnel.

100.4 Target Organism

The oriental fruit fly, Dacus dorsalis, Hendel

100.5 Precautionary Labeling

Dibrom 14 Concentrate Labeling

This product is toxic to fish and other wildlife. Keep out of lakes, streams and ponds. Direct application to water is prohibited. Do not apply when weather conditions favor drift from areas treated. Do not contaminate any body of water by cleaning of equipment or disposal of wastes.

This product is highly toxic to bees exposed to direct treatment or residues on crops. Protective information may be obtained from your Cooperative Agricultural Extension Service.

101. Hazard Assessment

Discussion

The concentration of naled a.i. per bait spot was estimated to be 0.00424 lb a.i. This is based on a 6" sq. bait spot, with over 600 bait spots being in 1 square mile area/or 1 bait spot per 1.06 acres. According to U.S.D.A., naled will be 10.1% of the 2 gallons, and methyl eugenol will be 72.5% of the 2 gallons.

It should be noted that methyl eugenol is used as an attractant (pheromone - like- compound) in this bait lure. Attractants are active ingredients as well. The maximum exposure of the total active ingredient which includes methyl eugenol (at 72.5%) is approximately 0.035 lb. a.i./bait spot.

101.2 Likelihood of Adverse Effects to Nontarget Organisms

The available toxicity data indicates that the active ingredient, naled, is moderately toxic to waterfowl (mallard LD_{50} = 52.2 mg/kg) on an acute oral basis. Two other supplemental studies indicate naled is highly to moderately acutely toxic with a reported canada goose LD_{50} = 36.9 mg/kg, and sharp tailed grouse LD_{50} = 64.9 mg/kg.

Naled is slightly toxic to both upland game and waterfowl on a dietary basis (mallard LC_{50} = 2724 ppm, bobwhite quail LC_{50} = 2117 ppm).

Based on the available aquatic data, naled is highly toxic to coldwater species (rainbow trout LC_{50} = 160 ppb). The LC_{50} for the bluegill is estimated to be 900 ppb, (see Naled Registration Standard, 1983) which indicates naled is highly toxic to warmwater fish as well.

Naled is very highly toxic to aquatic invertebrates (Daphnia magna LC_{50} 0.3 ppb).

Exposure

Aquatic

Based on the use pattern, EEB is not expecting this quarantine exemption to pose a hazard to aquatic organisms. Therefore, the estimated environmental concentration was not necessary to calculate.

Avian Species

EEB expects that there is 0.00424 lb naled a.i./bait spot or 0.035 total a.i./bait spot, and the use pattern limits exposure. Therefore, the potential hazard to avian species is expected to be minimal.

101.3 Endangered Species

EEB is not expecting these bait lures, used at a rate of 1 per 1.06 acre, to pose a hazard to endangered species (consultation with Ray Matheny and Rick Stevens, EEB).

Birds that forage for insects on tree trunks, such as the woodpecker, may be affected. However, there are no woodpeckers, or birds of this type, that are endangered in California.

The bait lures are expected to only attract species such as tephritidae, not insects such as moths. Therefore, there should be no potential hazard to endangered insects in California.

104.4 Adequacy of Toxicity Data

No studies were included with this submission. The available ecological test data on technical naled include the six basic studies.

There were no avian or aquatic toxicity studies available for review on methyl eugenol. Prior to registration of this attractant, four basic studies are required. They are as follows:

- Avian acute oral LD_{50} (EPA guideline No. 71-1).
- Avian dietary LC_{50} (EPA guideline No. 71-2).
- Freshwater fish LC_{50} (preferably bluegill or rainbow trout) (EPA guideline No. 71-1).
- Acute LC_{50} freshwater invertebrates (preferably Daphnia magna) (EPA guideline No. 72-2).

In addition, based on the nature of this use pattern the honeybee acute contact LD_{50} study may be required. (EPA guideline No. 141-1).

Additional studies may be required pending the results of these data.

101.5 Adequacy of Labeling

The labeling for this quarantine exemption should include the following statements.

Environmental Hazards

This pesticide is toxic to fish and wildlife. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water by cleaning of equipment or disposal of wastes. Do not apply directly to water or wetlands (swamps, bogs, marshes and potholes).

This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment areas.

103. Conclusions

EEB has reviewed this three year quarantine exemption requested by U.S.D.A. EEB believes that the use of this formulation, at a rate of 1-6" bait lure/per tree trunk/per 1.06 acres will not pose a hazard to nontarget organisms.

Prior to registration of methyl eugenol, testing in section 101.4 may be required.

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